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INT CL<sup>5</sup> G09F

(54) Indicating test information for an electrical appliance

(57) The method comprises the steps of affixing a machine readable label (1) to the flex (4) of an electrical appliance (5) by means of an adhesive tape (2) which indicates when the appliance (5) is due to be re-tested, the machine readable label (1) carrying information on the tests applicable to the appliance (5).

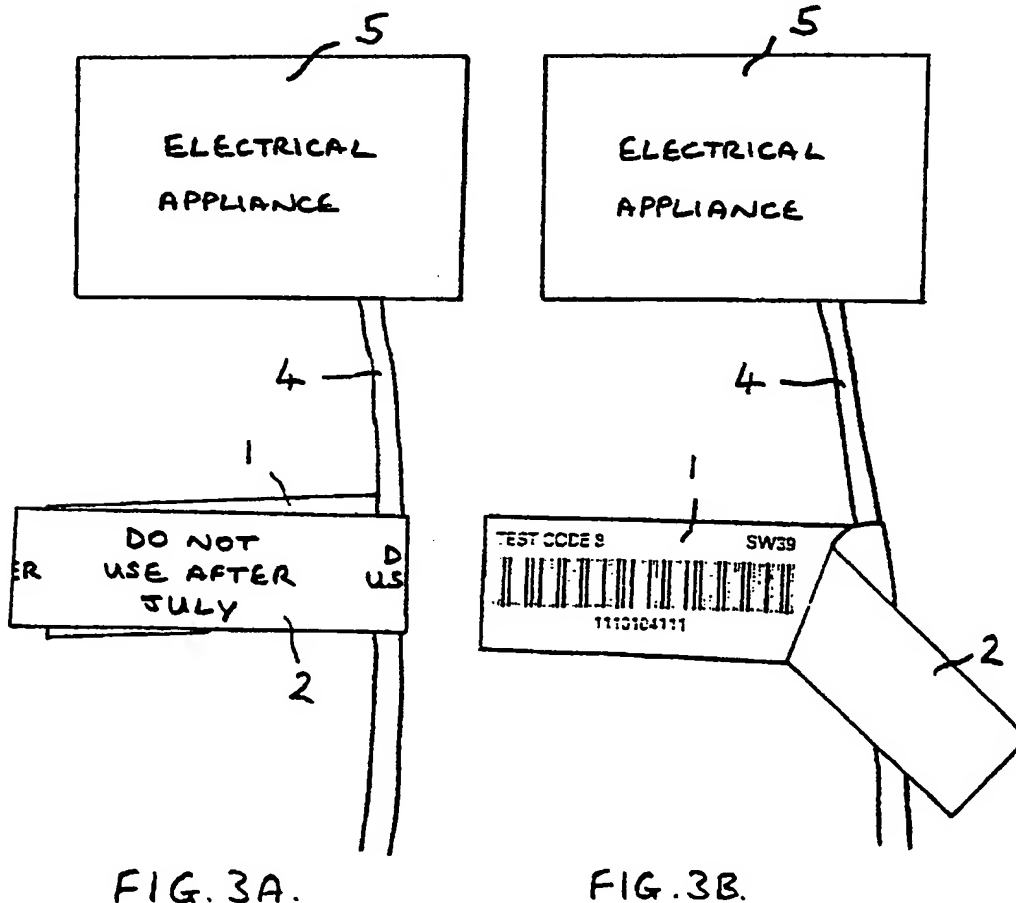


FIG. 3A.

FIG. 3B.

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FIG. 1A.

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## APPLICATION OF TEST CODES

| TEST CODE               | APPLIANCE TYPE | TESTS PERFORMED   |  |
|-------------------------|----------------|---|--|
| <b>1</b><br>1101214111  | Class 1 (240V) | VISUAL CHECK<br>25A EARTH BOND (0.1 Ohm)<br>INSULATION (2M Ohm) | FLASH (3mA)<br>LOAD (3.2 kVA)<br>EARTH LEAKAGE (0.75 mA) |
| <b>2</b><br>1101214211  | Class 1 (240V) | VISUAL CHECK<br>25A EARTH BOND (0.1 Ohm)<br>INSULATION (2M Ohm) | FLASH (3mA)<br>LOAD (3.2 kVA)<br>EARTH LEAKAGE (3.5 mA)  |
| <b>3*</b><br>1102204211 | Class 1 (240V) | VISUAL CHECK<br>8A EARTH BOND (0.5 Ohm)<br>INSULATION (2M Ohm)  | LOAD (3.2 kVA)<br>EARTH LEAKAGE (3.5 mA)                 |
| <b>4</b><br>1111214111  | Class 1 (110V) | VISUAL CHECK<br>25A EARTH BOND (0.1 Ohm)<br>INSULATION (2M Ohm) | FLASH (3mA)<br>LOAD (1.8 kVA)<br>EARTH LEAKAGE (0.75 mA) |
| <b>5*</b><br>1111204211 | Class 1 (110V) | VISUAL CHECK<br>25A EARTH BOND (0.1 Ohm)<br>INSULATION (2M Ohm) | LOAD (1.8 kVA)<br>EARTH LEAKAGE (3.5 mA)                 |
| <b>6</b><br>1100114111  | Class 2 (240V) | VISUAL CHECK<br>INSULATION (7M Ohm)<br>FLASH (3mA)              | LOAD (3.2 kVA)<br>EARTH LEAKAGE (0.75 mA)                |
| <b>7*</b><br>1100104111 | Class 2 (240V) | VISUAL CHECK<br>INSULATION (7M Ohm)                             | LOAD (3.2 kVA)<br>EARTH LEAKAGE (0.75 mA)                |
| <b>8*</b><br>1110104111 | Class 2 (110V) | VISUAL CHECK<br>INSULATION (7M Ohm)                             | LOAD (1.8 kVA)<br>EARTH LEAKAGE (0.75 mA)                |

FIG. 1B.

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FIG. 2A.



FIG. 2B.

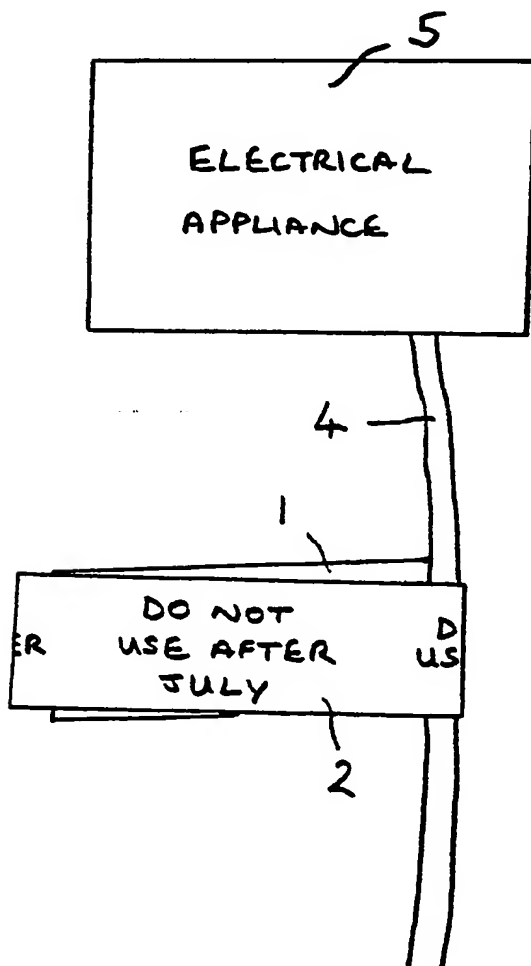


FIG. 3A.

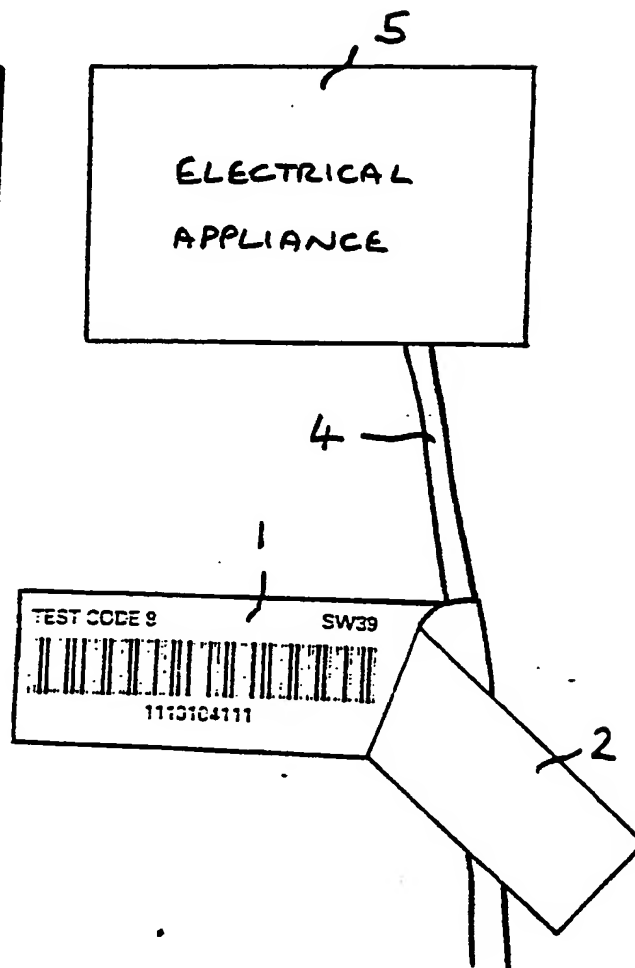


FIG. 3B.

METHOD OF INDICATING TEST INFORMATION FOR  
AN ELECTRICAL APPLIANCE

This invention relates to a method of indicating test information for an electrical appliance.

With increasing awareness and legislation relating to health and safety, particularly in the workplace, it is becoming more common to test electrical appliances on a regular basis to check that they are safe to operate. In order to assist the test engineer, machine readable labels, such as bar-code labels, are available to indicate the type of tests appropriate to a particular appliance. Difficulty has, however, been experienced in the attachment of such labels to the device. The labels are typically at least 2cm wide and about 6cm long and provided with an adhesive backing so they can be stuck directly to the appliance. This is satisfactory for some appliances where there is sufficient room and a convenient place to attach such a label in this manner. However, some devices are too small to have such a label attached to them or become hot in operation, e.g. a kettle, so that any labels attached thereto tend to fall off. On larger devices, there is no standard place for affixing such a label and a test engineer can waste time looking for the label not knowing whether it is concealed or has fallen off.

Thus, according to a first aspect of the invention, there is provided a method of indicating test information for an electrical appliance comprising the steps of affixing a machine readable label to a flex connected to the appliance by means of an adhesive tape bearing information regarding when the appliance is due to be re-tested, the machine readable label carrying information on the tests applicable to the appliance.

According to a second aspect of the invention, there is provided an electrical appliance having test information affixed to a flex connected thereto by a method as detailed above.

Other features of the invention will become apparent from the following description and from the subsidiary claims of the specification.

It should be noted that the term 'electrical appliance' is used herein to refer to any form of electrical device or electrical or electronic equipment.

The invention will now be further described, merely by way of example, with reference to the accompanying drawings, in which:

Figure 1A and 1B show machine readable labels and details of the specific tests relating to each of the test codes used in a preferred embodiment of the invention.

Figures 2A and 2B show adhesive date tapes used in a preferred embodiment of the invention; and

Figures 3A and 3B respectively show an electrical appliance with machine readable labels affixed to a flex connected thereto and how the date tapes can be peeled back or removed to reveal the machine readable label.

Figure 1A shows strips of adhesive bar-code labels 1 each of which relates to a particular test code and Figure 1B indicates the tests relating to each of these codes. Test code 1, for example, relates to a sequence of tests involving: a visual check of the appliance, a 25amp earth bond test (at 0.1 Ohm), an insulation test (at 2M Ohm), a flash test (at 3m A), a load test (at 3.2K VA) and an earth leakage test (at 0.75m A). Such tests may be carried out by test equipment connected to the appliance. The test equipment is provided with a bar code reader for reading the bar codes on the label attached to the appliance being tested. The test equipment then automatically carries out the appropriate sequence of electrical tests depending on the particular test code.

It may also be convenient to use a second bar code label (not illustrated) which identifies the appliance in question, e.g. appliance number 1 of XYZ company, so that the test engineer can keep a log of the appliances being tested.

As indicated above, the bar code labels are conventionally affixed directly to the appliance in question. However, in the method to be described, the labels are affixed to a flex connected to the appliance by means of an adhesive tape as will be described below.

Figures 2A and 2B illustrate preferred forms of adhesive tape. The tapes indicate when the appliance is next due to be tested. The tape 2 shown in Figure 2A carries the message 'DO NOT USE AFTER JULY' and the tape 3 shown in Figure 2B indicates the year. The test engineer will have a series of tapes bearing different dates so that the appropriate date can be indicated, e.g. if the appliance is due for re-test 6 months later, 1 year later or even 5 years later. The two date tapes 2 and 3 may be used side by side or one on top of the other as appropriate.

It would, of course, be equally possible to use a single tape (not shown) bearing both the month and the date but this would necessitate the carrying of a much larger number of tapes to ensure all the relevant dates can be indicated.

The dates tapes 2 and 3 are conveniently provided on a roll in the manner of a conventional adhesive tape with the date printed at appropriate intervals along the length thereof.

Figures 3A and 3B illustrate the manner in which the bar code labels 1 or affixed to a flex 4 of an appliance 5 using the date tape 2.

If two bar code labels 1 are used, one indicating the test code and the other identifying the appliance, these are first stuck back-to-back. A strip of date tape 2 approximately twice the length of the bar code labels 1 is then cut or torn off the roll and used to attach the bar

code labels 1 to the flex 4, the date tape 2 covering one side of the bar code labels 1, passing around the flex 4 and covering the other side of the bar code label 1.

The date tape 2 attached to the flex 4 thus indicates that the appliance 5 has been tested as well as indicating when it is next due to be tested.

When the appliance 5 is tested, the test engineer peels back the date tape 2 as shown in Figure 3B to reveal the bar code label 1. The bar code is then read using a bar code reader attached to test equipment which then performs the required tests depending on the test code indicated by the bar code label 1. If two bar code labels 1 are attached back-to-back, the date tape 2 is peeled back off both labels 1 so that both bar codes can be read.

The same bar code labels 1 or new labels if required, can then be re-attached to the flex 4 with new date tape 2 indicating the due date for the next test.

The bar code labels 1 can be any size that carries the required information but are typically around 1.5 to 2.0cm wide and 5.0 to 6.0cm long. The bar code labels 1 should also be formed of a material such that the bar code is not damaged when the date tape 2 is peeled off. The bar code labels 1 are thus preferably formed of a plastics material and/or have a protective laminate film provided over the bar code. Other types of machine readable information may, of course, be used in place of bar codes.

The date tapes 2 are preferably of a similar width to the bar code labels 1, i.e. around 1.5 to 2.0cm wide. The date information is preferably printed on the tapes 2 at intervals corresponding approximately to the length of bar code labels 1, or closer, e.g. between 3.0 and 5.0cm apart so that if a sufficient length of tape 2 is used to cover the bar code label 1, the date is visible on both sides. The date tape 2 or tapes 2 and 3 are also preferably colour coded so



that different colours are used for different months and years (or other time periods) to make it easier to see if an appliance is due for testing or to see which appliances have recently been tested and which have not.

The date tapes 2 and 3 are also preferably formed of a plastics material so they are not easily damaged and the adhesive thereon is such that the tapes can be readily affixed to cover a bar code label 1 and peeled off again when the label 1 is to be read without damaging the bar code.

It will be appreciated that the attachment of a bar code label 1 to a flex 4 in the manner described above takes up little room on the flex 4, i.e. just the width of one or two date tapes 2 and 3. The labels 1 do not therefore interfere with the cable 4 or have any significant affect on its flexibility. By this means, bar code labels can be securely and reliably attached to any type or size of electrical appliance 5 so long as it is provided with a flex 4. In practice, the bar code labels are likely to be attached to the flex 4 providing power to the appliance 5 at a position close to the appliance 5. However, they may be fixed in other positions as required by the circumstances.

CLAIMS

1. A method of indicating test information for an electrical appliance comprising the steps of affixing a machine readable label to a flex connected to the appliance by means of an adhesive tape bearing information regarding when the appliance is due to be re-tested, the machine readable label carrying information on the tests applicable to the appliance.
2. A method as claimed in claim 1 in which the machine readable label also carries information identifying the appliance.
3. A method as claimed in claim 2, in which two machine readable labels are attached to each other back to back, one carrying information on the tests applicable to the electrical appliance and the other identifying the appliance.
4. A method as claimed in claim 1, 2 or 3 in which the or each machine readable information is in the form of one or more bar codes.
5. A method as claimed in any preceding claim in which the adhesive tape is attached to one side of the label, passes round the flex and is attached to the other side of the label.
6. A method as claimed in any preceding claim in which the tape carries the date when the appliance is next due to be tested.
7. A method as claimed in claim 6 in which the tape carries the date information thereon at regular intervals along its length.
8. A method as claimed in claim 7 in which the date information is provided on the tape at intervals corresponding to or less than the length of the machine readable label.

9. A method as claimed in any of claims 6 to 8 in which the date information comprises the month in which the appliance is next due to be tested.
10. A method as claimed in claim 9 in which a second tape is used carrying date information comprising the year in which the appliance is next due to be tested.
11. A method as claimed in any preceding claim in which the adhesive tape or tapes are colour co-ordinated depending on the date when the appliance is next due to be tested.
12. A method as claimed in any preceding claim in which the machine readable label is formed of a plastics material and/or has a protective laminate film provided over the information thereon.
13. A method as claimed in any preceding claim in which the adhesive tape is formed of a plastics material.
14. A method of indicating test information substantially as hereinbefore described with reference to the accompanying drawings.
15. An electrical appliance having test information affixed to a flex connected thereto by means of a method as claimed in any of the preceding claims.
16. Any novel feature or combination of features disclosed herein.

**Patents Act 1977**  
**Examiner's report to the Comptroller under**  
**Section 17 (The Search Report)**

Application number

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-8-

**Relevant Technical fields**

(i) UK Cl (Edition L ) G4H (HJ) , B8F (FBG)

(ii) Int Cl (Edition 5 ) G09F

**Databases (see over)**

(i) UK Patent Office

(ii)

**Search Examiner**

M J DAVIS

**Date of Search**

25 JANUARY 1993

**Documents considered relevant following a search in respect of claims** 1-15

| Category<br>(see over) | Identity of document and relevant passages                     | Relevant to<br>claim(s) |
|------------------------|--|-------------------------|
| X, Y                   | GB 2059913 A (RAYCHEM) eg. abstract                            | 1-15                    |
| Y                      | EP 0459668 A1 (DU PONT) eg. page 3 line 56<br>to page 4 line 3 | 1-15                    |

| Category | Identity of document and relevant passages<br>- 9 - | Relevant<br>to claim(s) |
|----------|---|-------------------------|
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